Department of Energy
Germantown, MD 20874-1290
September 30, 1997

Mr. Gerald Acock
Financial Assistance Branch
Oakland Operations Office
1301 Clay Street
Oakland, CA 94612-5208

Dear Mr. Acock:

Enclosed are the FY 1998 budget information and statement of work for the University of Utah - DOE Cooperative Agreement for Dosimetry Studies in Support of EH-63 Programs.

As Libby White mentioned to you, we sent work authorizations for tasks 1 through 4 in the October financial plan for about 2/3 of the total FY 1998 funding. No new funds will be applied to Task 5 in FY 1998.

Please feel free to contact me, at (301) 903-5728, with any questions about this transmission.

Thanks, as always, for your assistance.

Sincerely,

R. T. Bell

R. Thomas Bell
Program Manager
DOE-University of Utah Cooperative Agreement

Printed with soy ink on recycled paper

THE UNIVERSITY OF UTAH

AIRBORNE

October 1, 1997

Mr. Tom Bell, Project Manager
U.S. Department of Energy
EH-63/270CC
19901 Germantown Road
Germantown, MD 20874

SUBJECT: Cooperative Agreement No.: DE-FC03-97SF21354
University of Utah Project Director: Scott C. Miller, Ph.D.

This letter is to provide University of Utah acceptance and endorsement for the attached updated Statement of Work and Revised Budgets for the project entitled: "DOSIMETRY STUDIES IN SUPPORT OF EH-63 PROGRAMS" which is under the direction of Dr. Scott C. Miller, Division of Radiobiology.

The total amount currently being allotted is $$888,390 for fiscal year 1998.

Please forward the award document (amendment) to my attention at the Office of Sponsored Projects, 1471 Federal Way, Salt Lake City, UT 84102.

Sincerely,

Amy J. Hofheins-Sikalis
Manager, Sponsored Projects
(801)585-6946
(801)585-3300 FAX

/ajh
cc: Dr. Scott Miller
Libby White by fax (301)903-1413

Office of Sponsored Projects
1471 Federal Way
Salt Lake City, Utah 84102
(801) 581-6903
Fax Machine (801) 581-3007

TECHNICAL ANALYSIS OF COST PROPOSAL FOR RESEARCH GRANTS

Name of Applicant University of Utah

Grant Number 97 - ES - 001765

In reviewing the applicant's budget submission, I have determined that the level of effort for research and training, which includes a percentage of the principal investigator's time and that of graduate students, post-doctoral staff, trainees, and other researchers, is consistent with the research objectives of this effort. In addition:

NOTE: Merely checking "Yes" or "No" does not relieve the technical evaluator of the responsibility to provide rationale as to the why such answers are appropriate.

		Yes	No
1.	The labor hours/mix and salary rates appear reasonable. (Do rates, for example, compare to those paid at similar institutions for similar work?)	✓	
	Comments: The quantity of labor hours is comparable to what we have supported in previous years, as are the salary rates		
2.a.	The requested travel (foreign or domestic) is relevant and pertinent to the successful completion of the grant.	✓	
b.	The requested travel (number of trips and days) is appropriate to this effort; or	✓	
c.	If specific trips are not identified, the projected travel costs are reasonable given the total scope of the effort.	N/A	
	Comments: Specific trips and corresponding costs have been identified and are reasonable		
3.	The particular type, kind, and quantity of equipment, materials, and computer time appear reasonable and necessary for this effort.	✓	
	Comments: Only 1 piece of equipment will be purchased & we have determined that it is a necessary cost. Other materials & associated costs also are reasonable.		

4. Consultant time and any other direct costs listed appear necessary for the conduct of this effort. ✓

Comments: _____

5. The arrangement whereby a portion of the substantive programmatic effort is being performed by an entity other than the grantee is acceptable. ✓

Comments: The grantee will work with both a Munich facility and Purdue University for use of their accelerator mass spectrometry equipment. The work will still be performed predominantly by the grantee's Principal Investigators

6. All other contracted effort appears necessary for the conduct of this grant. N/A

Comments: No other contract efforts

7. The cost sharing proposed in the application is necessary for the successful completion of the project. N/A

Comments: No cost sharing except facilities provided by the university.

Since the acceptance of a grant application confers the DOE's prior approval on elements specifically identified in it (such as foreign travel and equipment purchases), it is necessary to identify those budgeted items which are not approved or for which there is insufficient detail in the application:

1.
2.
3.

Other notes to the negotiator:

R T Bell

Program Manager or Technical Representative

Proposed FY 1998 Statement of Work for
Joint University of Utah - DOE Cooperative Agreement

Specific Aims:

To support the Department of Energy to perform various dosimetric and related projects critical to studies being conducted on the effects of radiation on those exposed to the Hiroshima and Nagasaki atomic bombs, the Chernobyl accident, and radioactive contamination from the Mayak facility. Specific tasks to be carried out by the University of Utah include:

1) Hiroshima Neutron Dosimetry,
2) Iodine-129 Dosimetry,
3) Retrospective Dosimetry Using Electron Paramagnetic Resonance and Thermoluminescence Techniques in Contaminated Areas of the Former Soviet Union,
4) Dosimetry and Risk Assessment as Related to Cohorts Exposed to the Radioactive Contamination from the Mayak Facility,
5) Dosimetry Research and Risk Analysis in the Ukraine and Belarus of Those Affected by the Chernobyl Accident.

1. ***Hiroshima Neutron Dosimetry***

The University of Utah will help the National Academy of Sciences Dosimetry Committee resolve the discrepancy in the Hiroshima dosimetry system developed in 1986 (DS86) by performing neutron activation measurements on copper and concrete core samples collected at various distances from the hypocenters of Hiroshima and Nagasaki. The principal investigator will accomplish this task by:

a) Obtaining copper samples from Hiroshima and measuring them for nickel-63 in order to obtain fast neutron fluences;
b) Measuring and profiling the thermal neutron activation of chlorine-36 in concrete cores from near the Hiroshima hypocenter to beyond 2000 meters and comparing measurements with calculations based on DS86, in order to complete the evaluation of thermal neutron fluences as a function of distance from the hypocenter at Hiroshima;
c) Performing intercalibration measurements of Chlorine-36 and Europium-152;
d) Assisting the National Academy of Science Dosimetry Committee in translating the measurement results into dosimetry for Hiroshima survivors.

2. ***I-129 Dosimetry***

The University of Utah will work with collaborators in Munich and Minsk to complete the development of a map of radioactive iodine contamination for Belarus that includes both total iodine concentrations in soil and radioiodine deposition densities. The principal investigator will accomplish this task by:

a) Providing equipment and instruction for the Minsk laboratory so that they can reliably extract iodine from soil;
b) Extracting iodine from the soil samples collected during the Belarus soil sampling expedition to be carried out predominantly in Minsk, with some quality assurance on selected samples at the University of Utah;
c) Measuring total iodine and iodine-129 in the samples; and
d) Publishing papers in peer-reviewed journals on the iodine work.

3. ***Retrospective Dosimetry Using Electron Paramagnetic Resonance (EPR) and Thermoluminenscence (TL) Techniques in Contaminated Areas of the Former Soviet Union***

The University of Utah will collaborate with the Urals Research Center for Radiation Medicine (URCRM), the Urals Institute of Metal Physics, and the European Commission (EC) to conduct retrospective dosimetry using EPR and TL techniques.

a) Collaboration with URCRM to:

1) Collect samples and conduct background dosimetry and analysis; and
2) Train their scientists, through a TL working visit to University of Utah, on techniques for sample preparation and measurement of brick samples collected from communities of the lower Techa River.

b) Collaboration with the Urals Institute of Metal Physics to:

1) Complete source intercalibration;
2) Explore nondestructive testing as compared with destructive testing;
3) Train Urals Institute of Metal Physics scientists on University of Utah measurement technique;
4) Complete analysis of sensitivity and reproducibility of EPR measurements on bisected teeth compared with Utah measurements.

c) Collaboration with the EC:

This task will involve supporting EC efforts to assess the feasibility of solid state and biological methods for retrospective dosimetry as well as modeling efforts which may be applied to accident sites in Russia. For this task, University of Utah investigators will:

1) Complete precision tests using measurement techniques on 5 enamel samples;
2) Participate in EPR working group in Rome and compile working group results related to precision achievable with individual measurement protocols;
3) Complete joint paper with GSF and URCRM on TL measurements from Metlino;
4) Explore establishment of EU intercomparison using bricks taken from the lower Techa River community of Muslymovo following initial analysis of samples in Utah laboratory, and distribute subset of samples to EU collaborating laboratories for intercomparison.

4. ***Dosimetry and Risk Assessment as Related to Cohorts Exposed to the Radioactive Contamination from Mayak Facility:***

This task will involve working with colleagues in Russia and in the United States to:

a) Develop an improved dose reconstruction system for the general population affected by the contamination from the Mayak facility;
b) Develop an improved dose reconstruction system for the Mayak workers.

5. ***Dosimetry Research and Risk Analysis in the Ukraine and Belarus of Those Affected by the Chernobyl Accident:***

a) Continue ongoing data analyses on dose-reconstruction efforts that are required to complete manuscripts of past EH-funded efforts.

FY98 BUDGET FOR HIROSHIMA NEUTRON DOSIMETRY (Final)

Prof. Tore Straume, Principal Investigator
University of Utah
September 29, 1997

Project Budget, FY98 (new $$ for FY98)			
Personnel	SALARY	%FTE	COSTS $$
Straume, Tore (PI)	102,286	0.753	77,021
Postdoc	30,000	0.753	22,575
Student	15,000	0.500	7,500
Total salary			107,096
Emp. benefits (33%)			32,867
Total sal. & emp. ben.			139,963
Operations			
Travel			11,200
Purchased Service (AMS: Cl-36 @ Purdue)			45,000
Telephone			2,100
Maintenance			0
Supplies			24,716
Total operations			83,016
Total Pers & Operations			222,979
Ind. costs @49.5%			110,375
Total pers. oper. ind cost			333,354
Equipment (for Ni separation)			16,646
Total including equipment			350,000
Total for Utah (less $80,000 for LLNL)			270,000

I-129 Dosimetry
Dr. Tore Straume, Principal Investigator
University of Utah

Project Budget, 1998

PERSONNEL	SALARY	%FTE	FY'1998
Straume, Tore (PI)	102,286	0.247	25,265
Postdoc	30,000	0.247	7,410
TBN (grad student)	15,000	0.500	7,500
TOTAL SALARY			40,175
EMP. BENE. (33%)			10,783
TOTAL SAL&EB			50,957

Operations	
Travel (incl. training of Minsk chemist)	13,928
Purchased Service (AMS)	22,500
Telephone	1,313
Maintenance	1,575
Supplies	18,750
Total Operations	58,066
Total Pers & Operations	107,023
Ind. costs @49.5%	52,976
Total Pers, Oper, Ind Costs	**159,999**

Project Budget (TL/EPR)

PERSONNEL	SALARY	FTE	FY1998
HASKELL, E (Sci)	67,739	50%	33,869
KENNER, G (Sci)	50,175	50%	25,088
R. Hayes (Grd. S.)	30,415	60%	18,249
Diffley, R. (Tech)	15,080	20%	3,016
TOTAL SALARY			80,222
EMP. BENE. (33%)			26,473
TOTAL SAL&EB			106,695
[illegible]		Sci only	77,206

Operations	
Travel	10,000
Other (Maintenance/phone/fax/mail)	2,631
Publication costs	2,000
Materials and Supplies	14,000
Visiting Scientists	12,500
Total Operations	41,131
w/o travel	31,131
Total Pers & Operations	147,826
Subject to overhead†	147,826
Ind. costs (49.5% yr 1-3; 50% yr 4-5)	73,174
Total Pers, Oper, Ind Costs	**221,000**
Equipment	0
Total including equipment	**221,000**

† Only 1st 25K subjected to Ind Costs

Values in thousands

Budget Sheet Studies in Russia for the JCCRER
Principal Investigator: Lynn R. Anspaugh

Project Budget, 1998-1999

PERSONNEL	SALARY	%FTE	FY'1998	%FTE	FY'1999
Scl	124.400	0.750	93.300	0.750	97.965
Tech	22.000	0.000	.0	0.750	17.325
TBN (undergrad	12.000	0.000	.0	0.750	9.450
	.0	0.500	.0	0.750	.0
TOTAL SALARY			93.300		124.740
EMP. BENE. (33%)			30.789		41.164
TOTAL SAL&EB			124.089		165.904
Operations					
Travel			26.000		27.300
Telephone			2.700		2.835
Maintenance			.0		.0
Supplies			6.000		6.300
Total Operations			34.700		36.435
Total Pers & Operations			158.789		202.339
Ind. costs @49.5%			78.601		100.158
Total Pers, Oper, Ind Costs			**237.390**		**302.497**
Equipment			.0		.0
Total including equipment			**237.390**		**302.497**